

HCV Genome and Recombinant Proteins

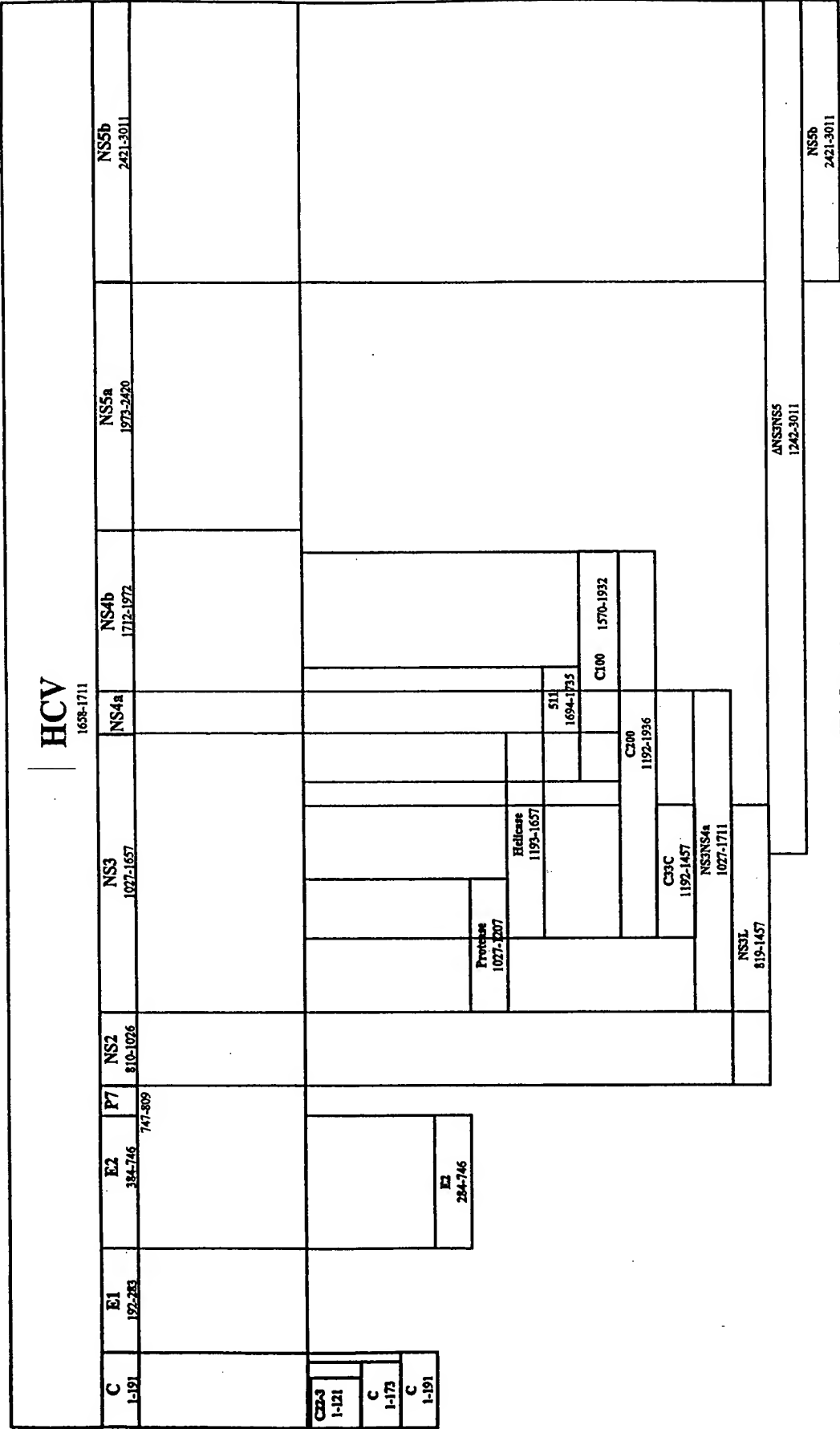
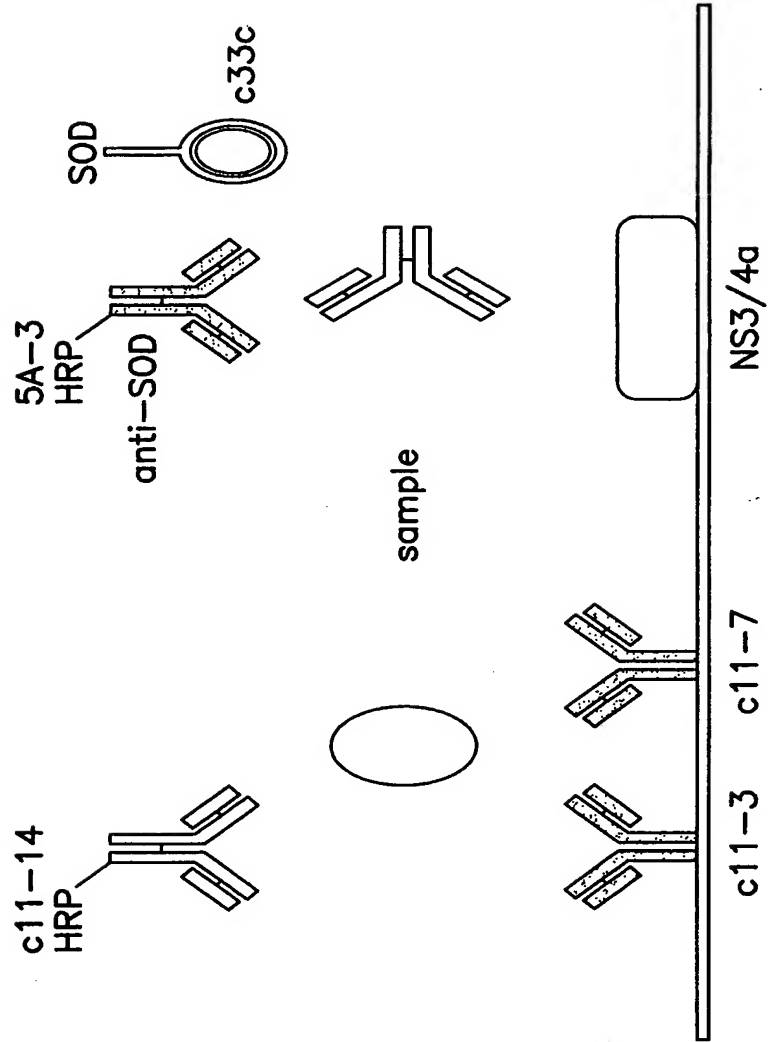


FIG. 1



**FIG. 2**

MSPIDPMGHHHHHRRRASVAAGILVPRGSPGLDGICSIEEFAPITAYAQQTRGLLGCIITSLTGRDKNQVE	73
GEVQIVSTAAQTFLATCINGVCWTVYHGAGTRTIASPKGPVIQMYTNVDQDLVGPASQGTRSLTPCTCGSSD	146
LYLVTRHADVIPVRRRGDSRGSLLSPRPISYLKGSAGGPLLCPAGHAVGIFRAAVCTRGVAKAVDFIPVENLE	219
TTMRSPVFTDNSSPPVVPQSFQVAHLHAPTSGSKSTKVPAAAYAAQGYKVLVLPNSVAATLGFAYMSKAHGID	292
PNIRTGVRTTTTGSPITYSTYCKFLADGGCGGGAYDIIICDECHSTDATSIIGIGTVLDQAEAGARLVVLAT	365
ATPPGSVTVPHPNIEEVALSTTGEIPFYGKAIPLEVIKGRHLIFCHSKKKCDELAAKLVALGINAVAYVRGL	438
DVSVIPPIGDVVVATDALMTGYTGDFDSVIDCNTCVTQTVDVDFSLDPTFTIETITL PQDAVSRTQRRGRTGRG	511
KPGIYRFVAPGERPSGMFDSSVLCECYDAGCAWYELTPAETTVRLRAYMNTPGLPVCQDHLEFWEGVFTGLTH	584
IDAHFLSQTKQSGENLPYLVAYQATVCARAQAPPPSWDQMMKCLIRLKPTLHGPTPLL YRLGAVQNEITLTHP	657
VTKYIMTCMSADLEVVVTSITWLVGGVLAALAAAYCLSTGCVVIVGRVVLSGKPAIIPDREVLYREFDEMEEC	728

**FIG. 3**

[illegible]

**FIG. 4A**

200  
 P P V V P Q S F Q V A H L H A  
 CCA CCA GTA GTG CCC CAG AGC TTC CAG GTG GCT CAC CTC CAT GCT

210  
 P T G S G K S T K V P A A Y A  
 CCC ACA GGC AGC GGC AAA AGC ACC AAG GTC CCG GCT GCA TAT GCA

230  
 A Q G Y K V L V L N P S V A A  
 GCT CAG GGC TAT AAG GTG CTA GTA CTC AAC CCC TCT GTT GCT GCA

240  
 T L G F G A Y M S K A H G I D  
 ACA CTG GGC TTT GGT GCT TAC ATG TCC AAG GCT CAT GGG ATC GAT

260  
 P N I R T G V R T I T T G S P  
 CCT AAC ATC AGG ACC GGG GTG AGA ACA ATT ACC ACT GGC AGC CCC

270  
 I T Y S T Y G K F L A D G G C  
 ATC ACG TAC TCC ACC TAC GGC AAG TTC CTT GCC GAC GGC GGG TGC

290  
 S G G A Y D I I I C D E C H S  
 TCG GGG GGC GCT TAT GAC ATA ATA ATT TGT GAC GAG TGC CAC TCC

300  
 T D A T S I L G I G T V L D Q  
 ACG GAT GCC ACA TCC ATC TTG GGC ATT GGC ACT GTC CTT GAC CAA

320  
 A E T A G A R L V V L A T A T  
 GCA GAG ACT GCG GGG GCG AGA CTG GTT GTG CTC GCC ACC GCC ACC

330  
 P P G S V T V P H P N I E E V  
 CCT CCG GGC TCC GTC ACT GTG CCC CAT CCC AAC ATC GAG GAG GTT

350  
 A L S T T G E I P F Y G K A I  
 GCT CTG TCC ACC ACC GGA GAG ATC CCT TTT TAC GGC AAG GCT ATC

360  
 P L E V I K G G R H L I F C H  
 CCC CTC GAA GTA ATC AAG GGG GGG AGA CAT CTC ATC TTC TGT CAT

380  
 S K K K C D E L A A K L V A L  
 TCA AAG AAG AAG TGC GAC GAA CTC GCC GCA AAG CTG GTC GCA TTG

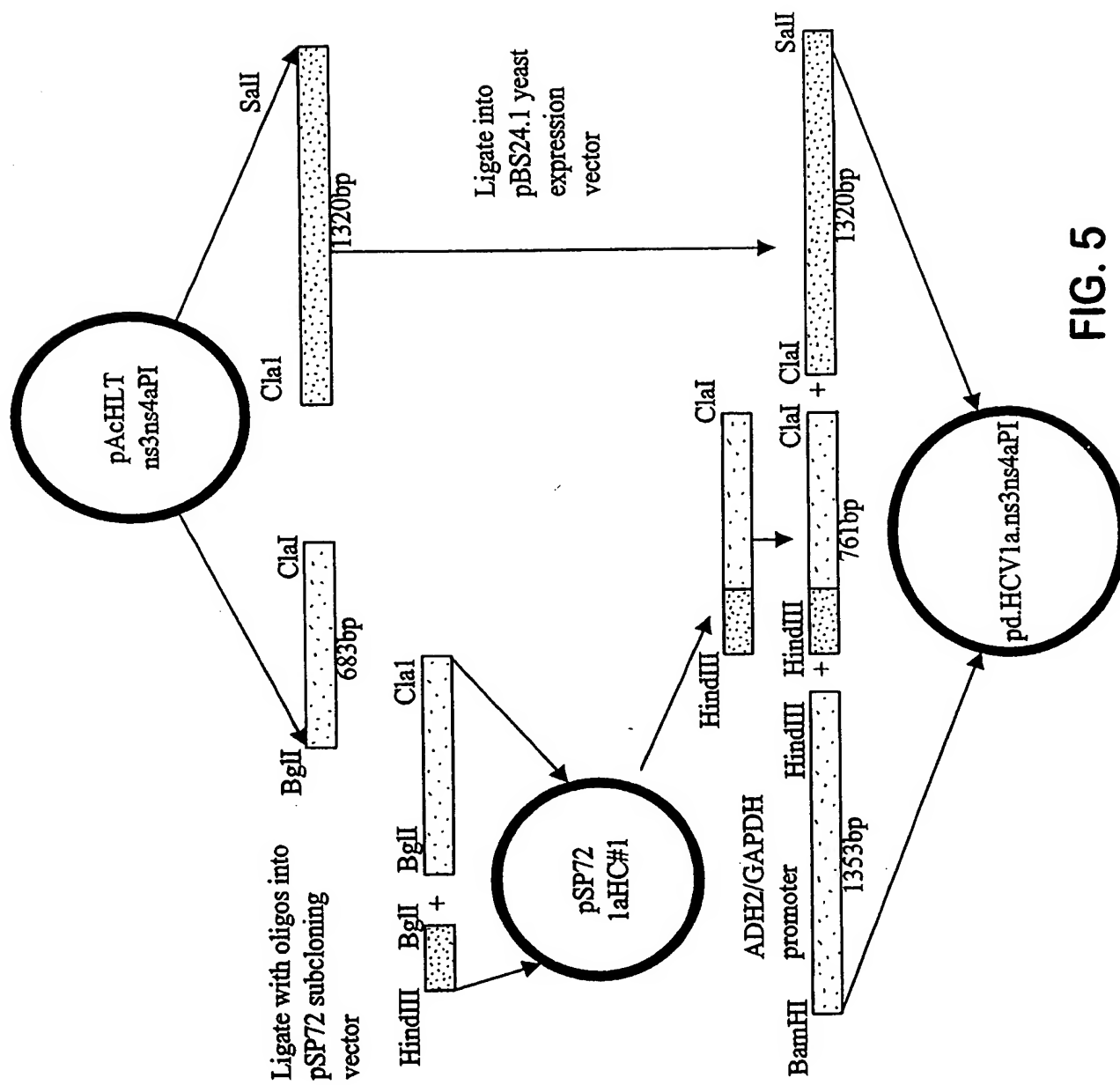
FIG. 4B

				390										400
G	I	N	A	V	A	Y	Y	R	G	L	D	V	S	V
GGC	ATC	AAT	GCC	GTG	GCC	TAC	TAC	CGC	GGT	CTT	GAC	GTG	TCC	GTC
									410					
I	P	P	I	G	D	V	V	V	V	A	T	D	A	L
ATC	CCG	CCC	ATC	GGC	GAT	GTT	GTC	GTC	GTG	GCA	ACC	GAT	GCC	CTC
				420										430
M	T	G	Y	T	G	D	F	D	S	V	I	D	C	N
ATG	ACC	GGC	TAT	ACG	GGC	GAC	TTC	GAC	TCG	GTG	ATA	GAC	TGC	AAT
									440					
T	C	V	T	Q	T	V	D	F	S	L	D	P	T	F
ACG	TGT	GTC	ACC	CAG	ACA	GTC	GAT	TTC	AGC	CTT	GAC	CCT	ACC	TTC
				450										460
T	I	E	T	I	T	L	P	Q	D	A	V	S	R	T
ACC	ATT	GAG	ACA	ATC	ACG	CTC	CCC	CAA	GAT	GCT	GTC	TCC	CGC	ACT
									470					
Q	R	R	G	R	T	G	R	G	K	P	G	I	Y	R
CAA	CGT	CGG	GGC	AGG	ACT	GGC	AGG	GGG	AAG	CCA	GGC	ATC	TAC	AGA
				480										490
F	V	A	P	G	E	R	P	S	G	M	F	D	S	S
TTT	GTG	GCA	CCG	GGG	GAG	CGC	CCC	TCC	GGC	ATG	TTC	GAC	TCG	TCC
									500					
V	L	C	E	C	Y	D	A	G	C	A	W	Y	E	L
GTC	CTC	TGT	GAG	TGC	TAT	GAC	GCA	GGC	TGT	GCT	TGG	TAT	GAG	CTC
				510										520
T	P	A	E	T	T	V	R	L	R	A	Y	M	N	T
ACG	CCC	GCC	GAG	ACT	ACA	GTT	AGG	CTA	CGA	GCG	TAC	ATG	AAC	ACC
									530					
P	G	L	P	V	C	Q	D	H	L	E	F	W	E	G
CCG	GGG	CTT	CCC	GTG	TGC	CAG	GAC	CAT	CTT	GAA	TTT	TGG	GAG	GGC
				540										550
V	F	T	G	L	T	H	I	D	A	H	F	L	S	Q
GTC	TTT	ACA	GGC	CTC	ACT	CAT	ATA	GAT	GCC	CAC	TTT	CTA	TCC	CAG
									560					
T	K	Q	S	G	E	N	L	P	Y	L	V	A	Y	Q
ACA	AAG	CAG	AGT	GGG	GAG	AAC	CTT	CCT	TAC	CTG	GTA	GCG	TAC	CAA
				570										580
A	T	V	C	A	R	A	Q	A	P	P	P	S	W	D
GCC	ACC	GTG	TGC	GCT	AGG	GCT	CAA	GCC	CCT	CCC	CCA	TCG	TGG	GAC

**FIG. 4C**

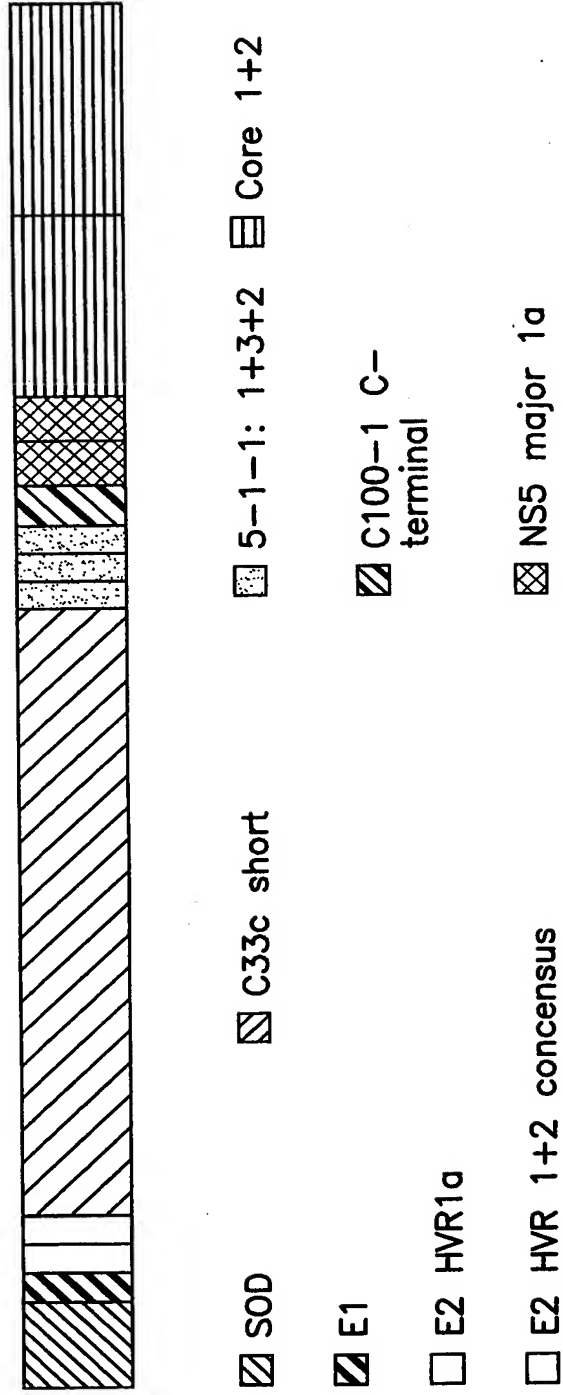
590  
 Q M W K C L I R L K P T L H G  
 CAG ATG TGG AAG TGT TTG ATT CGC CTC AAG CCC ACC CTC CAT GGG  
 600  
 P T P L L Y R L G A V Q N E I  
 CCA ACA CCC CTG CTA TAC AGA CTG GGC GCT GTT CAG AAT GAA ATC  
 610  
 620  
 T L T H P V T K Y I M T C M S  
 ACC CTG ACG CAC CCA GTC ACC AAA TAC ATC ATG ACA TGC ATG TCG  
 630  
 A D L E V V T S T W V L V G G  
 GCC GAC CTG GAG GTC GTC ACG AGC ACC TGG GTG CTC GTT GGC GGC  
 640  
 650  
 V L A A L A A Y C L S T G C V  
 GTC CTG GCT GCT TTG GCC GCG TAT TGC CTG TCA ACA GGC TGC GTG  
 660  
 V I V G R V V L S G K P A I I  
 GTC ATA GTG GGC AGG GTC GTC TTG TCC GGG AAG CCG GCA ATC ATA  
 670  
 680  
 P D R E V L Y R E F D E M E E  
 CCT GAC AGG GAA GTC CTC TAC CGA GAG TTC GAT GAG ATG GAA GAG  
 686  
 C  
 TGC

FIG. 4D





## MEFA 12 Antigen Construct



**FIG. 6**

1	M	A	T	K	A	V	C	V	L	K	G	D	G	P	V	10	
	ATG	GCT	ACA	AAG	GCT	GTT	TGT	GTT	TTG	AAG	GGT	GAC	GGC	CCA	GTT	45	
					20											30	
	Q	G	I	I	N	F	E	Q	K	E	S	N	G	P	V	90	
	CAA	GGT	ATT	ATT	AAC	TTC	GAG	CAG	AAG	GAA	AGT	AAT	GGA	CCA	GTG		
										40							
	K	V	W	G	S	I	K	G	L	T	E	G	L	H	G	135	
	AAG	GTG	TGG	GGA	AGC	ATT	AAA	GGA	CTG	ACT	GAA	GGC	CTG	CAT	GGA		
					50											60	
	F	H	V	H	E	F	G	D	N	T	A	G	C	T	S	180	
	TTC	CAT	GTT	CAT	GAG	TTT	GGA	GAT	AAT	ACA	GCA	GGC	TGT	ACC	AGT		
										70							
	A	G	P	H	F	N	P	L	S	T	R	G	C	N	C	225	
	GCA	GGT	CCT	CAC	TTT	AAT	CCT	CTA	TCC	ACG	CGT	GGT	TGC	AAT	TGC		
					80											90	
	S	I	Y	P	G	H	I	T	G	H	R	M	A	W	K	270	
	TCT	ATC	TAT	CCC	GGC	CAT	ATA	ACG	GGT	CAC	CGC	ATG	GCA	TGG	AAG		
										100							
	L	G	S	A	A	R	T	T	S	G	F	V	S	L	F	315	
	CTT	GGT	TCC	GCC	GCC	AGA	ACT	ACC	TCG	GGC	TTT	GTC	TCC	TTG	TTC		
					110											120	
	A	P	G	A	K	Q	N	E	T	H	V	T	G	G	A	360	
	GCC	CCA	GGT	GCC	AAA	CAA	AAC	GAA	ACT	CAC	GTC	ACG	GGA	GGC	GCA		
										130							
	A	A	R	T	T	S	G	L	T	S	L	F	S	P	G	405	
	GCC	GCC	CGA	ACT	ACG	TCT	GGG	TTG	ACC	TCT	TTG	TTC	TCC	CCA	GGT		

**FIG. 7A**

														140															150	
A	S	Q	N	I	Q	L	I	T	S	T	D	N	S	S																
GCC	AGC	CAA	AAC	ATT	CAA	TTG	ATT	ACT	AGT	ACG	GAT	AAC	TCC	TCT	450															
														160																
P	P	V	V	P	Q	S	F	Q	V	A	H	L	H	A																
CCA	CCA	GTA	GTG	CCC	CAG	AGC	TTC	CAG	GTG	GCT	CAC	CTC	CAT	GCT	495															
														170															180	
P	T	G	S	G	K	S	T	K	V	P	A	A	Y	A																
CCC	ACA	GGC	AGC	GGC	AAA	AGC	ACC	AAG	GTC	CCG	GCT	GCA	TAT	GCA	540															
														190																
A	Q	G	Y	K	V	L	V	L	N	P	S	V	A	A																
GCT	CAG	GGC	TAT	AAG	GTG	CTA	GTA	CTC	AAC	CCC	TCT	GTT	GCT	GCA	585															
														200															210	
T	L	G	F	G	A	Y	M	S	K	A	H	G	I	D																
ACA	CTG	GGC	TTT	GGT	GCT	TAC	ATG	TCC	AAG	GCT	CAT	GGG	ATC	GAT	630															
														220																
P	N	I	R	T	G	V	R	T	I	T	T	G	S	P																
CCT	AAC	ATC	AGG	ACC	GGG	GTG	AGA	ACA	ATT	ACC	ACT	GGC	AGC	CCC	675															
														230															240	
I	T	Y	S	T	Y	G	K	F	L	A	D	G	G	C																
ATC	ACG	TAC	TCC	ACC	TAC	GGC	AAG	TTC	CTT	GCC	GAC	GGC	GGG	TGC	720															
														250																
S	G	G	A	Y	D	I	I	I	C	D	E	C	H	S																
TCG	GGG	GGC	GCT	TAT	GAC	ATA	ATA	ATT	TGT	GAC	GAG	TGC	CAC	TCC	765															
														260															270	
T	D	A	T	S	I	L	G	I	G	T	V	L	D	Q																
ACG	GAT	GCC	ACA	TCC	ATC	TTG	GGC	ATC	GGC	ACT	GTC	CTT	GAC	CAA	810															
														280																
A	E	T	A	G	A	R	L	V	V	L	A	T	A	T																
GCA	GAG	ACT	GCG	GGG	GCG	AGA	CTG	GTT	GTG	CTC	GCC	ACC	GCC	ACC	855															
														290															300	
P	P	G	S	V	T	V	P	H	P	N	I	E	E	V																
CCT	CCG	GGC	TCC	GTC	ACT	GTG	CCC	CAT	CCC	AAC	ATC	GAG	GAG	GTT	900															

FIG. 7B

														310														
A	L	S	T	T	G	E	I	P	F	Y	G	K	A	I														
GCT	CTG	TCC	ACC	ACC	GGA	GAG	ATC	CCT	TTT	TAC	GGC	AAG	GCT	ATC	945													
														320														
P	L	E	V	I	K	G	G	R	H	L	I	F	C	H	330													
CCC	CTC	GAA	GTA	ATC	AAG	GGG	GGG	AGA	CAT	CTC	ATC	TTC	TGT	CAT	990													
														340														
S	K	K	K	C	D	E	L	A	A	K	L	V	A	L														
TCA	AAG	AAG	AAG	TGC	GAC	GAA	CTC	GCC	GCA	AAG	CTG	GTC	GCA	TTG	1035													
														350														
G	I	N	A	V	A	Y	Y	R	G	L	D	V	S	V	360													
GGC	ATC	AAT	GCC	GTG	GCC	TAC	TAC	CGC	GGT	CTT	GAC	GTG	TCC	GTC	1080													
														370														
I	P	T	S	G	D	V	V	V	V	A	T	D	A	L														
ATC	CCG	ACC	AGC	GGC	GAT	GTT	GTC	GTC	GTG	GCA	ACC	GAT	GCC	CTC	1125													
														380														
M	T	G	Y	T	G	D	F	D	S	V	I	D	C	N	390													
ATG	ACC	GGC	TAT	ACC	GGC	GAC	TTC	GAC	TCG	GTG	ATA	GAC	TGC	AAT	1170													
														400														
T	C	A	C	S	G	K	P	A	I	I	P	D	R	E														
ACG	TGT	GCA	TGC	TCC	GGG	AAG	CCG	GCA	ATC	ATA	CCT	GAC	AGG	GAA	1215													
														410														
V	L	Y	R	E	F	D	E	M	E	E	C	S	Q	H	420													
GTC	CTC	TAC	CGA	GAG	TTC	GAT	GAG	ATG	GAA	GAG	TGC	TCT	CAG	CAC	1260													
														430														
L	P	Y	I	E	Q	G	M	M	L	A	E	Q	F	K														
TTA	CCG	TAC	ATC	GAG	CAA	GGG	ATG	ATG	CTC	GCC	GAG	CAG	TTC	AAG	1305													
														440														
Q	K	A	L	G	L	S	R	G	G	K	P	A	I	V	450													
CAG	AAG	GCC	CTC	GGC	CTC	TCG	CGA	GGG	GGC	AAG	CCG	GCA	ATC	GTT	1350													
														460														
P	D	K	E	V	L	Y	Q	Q	Y	D	E	M	E	E														
CCA	GAC	AAA	GAG	GTG	TTG	TAT	CAA	CAA	TAC	GAT	GAG	ATG	GAA	GAG	1395													

**FIG. 7C**

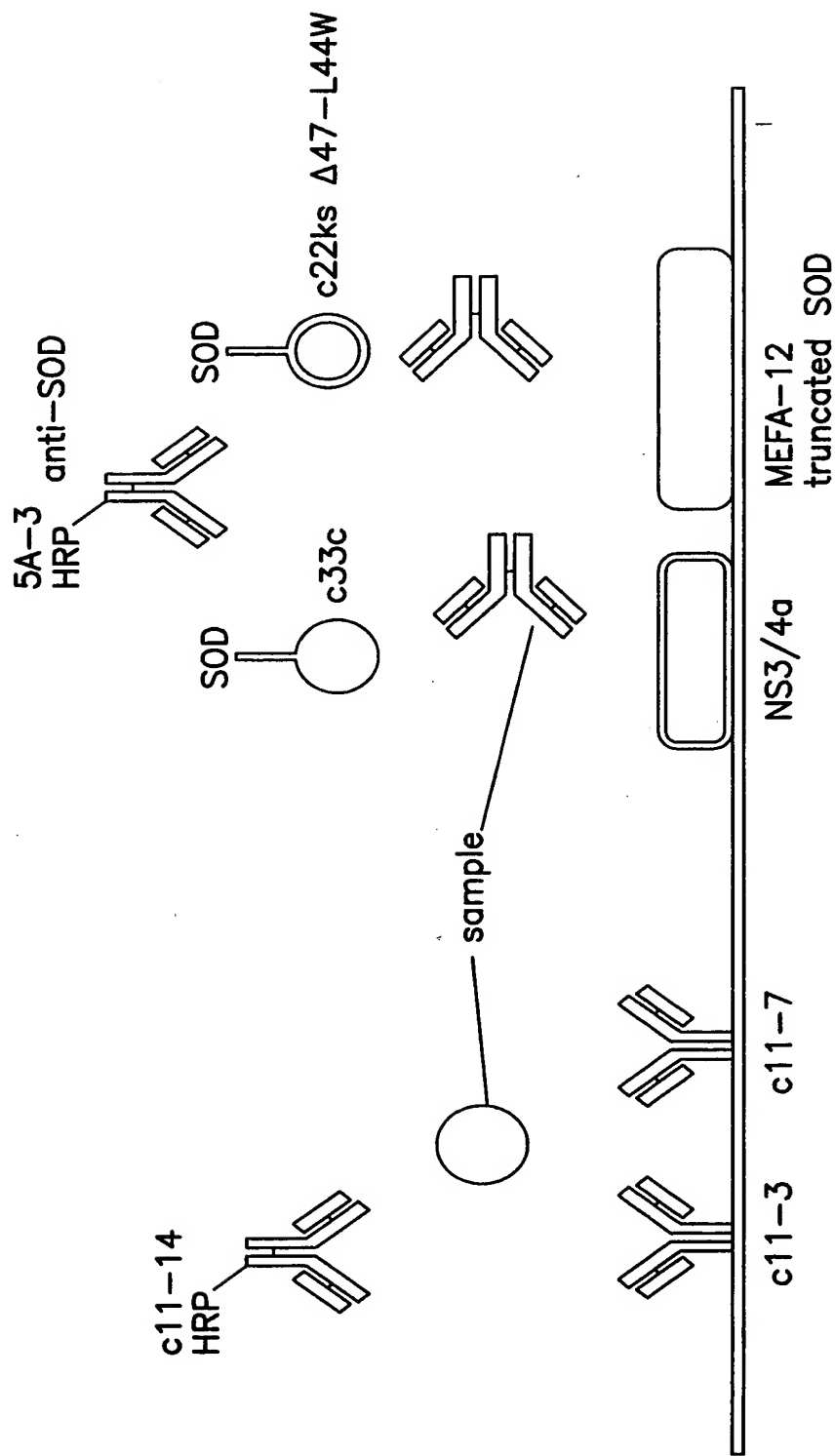


														640	
P	D	Y	N	P	P	L	V	E	T	W	K	K	P	D	
CCG	GAC	TAT	AAC	CCC	CCG	CTA	GTG	GAG	ACG	TGG	AAA	AAG	CCC	GAC	1940
														650	
Y	E	P	P	V	V	H	G	R	K	T	K	R	N	T	
TAC	GAA	CCA	CCT	GTG	GTC	CAT	GGC	AGA	AAG	ACC	AAA	CGT	AAC	ACC	1985
														670	
N	R	R	P	Q	D	V	K	F	P	G	G	G	Q	I	
AAC	CGG	CGG	CCG	CAG	GAC	GTC	AAG	TTC	CCG	GGT	GGC	GGT	CAG	ATC	2030
														680	
V	G	G	V	Y	L	L	P	R	R	G	P	R	L	G	
GTT	GGT	GGA	GTT	TAC	TTG	TTG	CCG	CGC	AGG	GGC	CCT	AGA	TTG	GGT	2075
														700	
V	L	A	T	R	K	T	S	P	I	P	K	A	R	R	
GTG	CTC	GCG	ACG	AGA	AAG	ACT	TCC	CCT	ATC	CCC	AAG	GCT	CGT	CGG	2120
														710	
P	E	G	R	T	W	A	Q	P	G	Y	P	W	P	L	
CCC	GAG	GGC	AGG	ACC	TGG	GCT	CAG	CCC	GGT	TAC	CCT	TGG	CCC	CTC	2165
														730	
Y	G	N	K	D	R	R	S	T	G	K	S	W	G	K	
TAT	GGC	AAT	AAG	GAC	AGA	CGG	TCT	ACA	GGT	AAG	TCC	TGG	GGT	AAG	2210
														740	
P	G	Y	P	W	P	R	K	T	K	R	N	T	N	R	
CCA	GGG	TAC	CCT	TGG	CCA	AGA	AAG	ACC	AAA	CGT	AAC	ACC	AAC	CGG	2255
														760	
R	P	Q	D	V	K	F	P	G	G	G	Q	I	V	G	
CGG	CCG	CAG	GAC	GTC	AAG	TTC	CCG	GGT	GGC	GGT	CAG	ATC	GTT	GGT	2300
														770	
G	V	Y	L	L	P	R	R	G	P	R	L	G	V	L	
GGA	GTT	TAC	TTG	TTG	CCG	CGC	AGG	GGC	CCT	AGA	TTG	GGT	GTG	CTC	2345
														790	
A	T	R	K	T	S	P	I	P	K	A	R	R	P	E	
GCG	ACG	AGA	AAG	ACT	TCC	CCT	ATC	CCC	AAG	GCT	CGT	CGG	CCC	GAG	2390

FIG. 7E

				800										810-		
G	R	T	W	A	Q	P	G	Y	P	W	P	L	Y	G		
GGC	AGG	ACC	TGG	GCT	CAG	CCC	GGT	TAC	CCT	TGG	CCC	CTC	TAT	GGC	2435	
									820							
N	K	D	R	R	S	T	G	K	S	W	G	K	P	G		
AAT	AAG	GAC	AGA	CGG	TCT	ACA	GGT	AAG	TCC	TGG	GGT	AAG	CCA	GGG	2480	
				829												
Y	P	W	P	OC												
TAC	CCT	TGG	CCC	TAA	TGAGTCGAC											

**FIG. 7F**



**FIG. 8**